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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,657	11/15/2001	Fredrik Henn	0226-0112P	7524
2292	7590	06/17/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			CHAWAN, VIJAY B	
			ART UNIT	PAPER NUMBER
			2654	

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/987,657

Applicant(s)

HENN ET AL.

Examiner

Vijay B. Chawan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. Claims 17 and 18 are allowed.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10, 11, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al., ("A High-Efficiency Speech Coding Algorithm based on ADPCM with Multi-Quantizer," International Conference on Acoustics, Speech, and Signal Processing, April 1986), in view of Kamai et al., (6,490,562).

As per claim 10, Taniguchi et al., teach an apparatus for encoding audio signal to obtain an encoded audio signal to be used by a decoder having a high-frequency reconstruction module for performing a high-frequency reconstruction for a frequency range above a crossover frequency, the apparatus comprising:

a core encoder for encoding a lower frequency band of the audio signal up to the crossover frequency, the crossover frequency being variable, and the core encoder

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being operable on a block-wise frame by frame basis, and a crossover frequency control module for estimating, dependent on at least one of a measure of the degree of difficulty for encoding the audio signal by the core encoder and a border between a tonal and a noise-like frequency range of the audio signal, the crossover frequency to be selected by the core encoder for a frame of a series of subsequent frames (, page 1721, Col.1, and, The QMF of figure 1, equation 3, left column page 1722, lines 7-8).

Taniguchi et al., however, do not specifically teach that the crossover frequency is variable adaptively over time for the series of subsequent frames. Kamai et al., do teach that crossover frequency is variable adaptively over time for the series of subsequent frames (Col.2, lines 39-54). Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention to apply the teachings of Kamai et al., in the apparatus of Taniguchi et al., because an artisan would readily recognize that this would effectively avoid degrading the audio quality that does not conform to an initial determination.

As per claim 11, Taniguchi et al., teach the apparatus according to claim 10, wherein a measure of a high degree of difficulty lowers the crossover frequency, and a measure of a low degree of difficulty increases the crossover frequency (page 1721, last paragraph, right column - first and second paragraphs, page 1722).

Claim 16 is a method to be performed on apparatus claim 10, and is similar in scope and content of claim 10, and is rejected under similar rationale.

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4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al., ("A High-Efficiency Speech Coding Algorithm based on ADPCM with Multi-Quantizer," International Conference on Acoustics, Speech, and Signal Processing, April 1986), in view of Kamai et al., (6,490,562), as applied to claim 10 above, and further in view of Moses (5,404,377).

Taniguchi et al., in view of Kamai et al., teach the system according to claim 10, but do not specifically teach wherein said measure is based on a perceptual entropy of the audio signal. Moses, does teach simultaneous transmission of data and audio signals by means of perceptual coding, and that the measure is based on perceptual entropy of a signal (Col.2, lines 23-25). Therefore it would have been obvious to one with ordinary skill in the art at the time of invention to apply the teaching of Moses to the apparatus/method of Taniguchi et al., because, this would provide improved correlation of error with original signal and improves the accuracy of error prediction.

5. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al., ("A High-Efficiency Speech Coding Algorithm based on ADPCM with Multi-Quantizer," International Conference on Acoustics, Speech, and Signal Processing, April 1986), in view of Kamai et al., (6,490,562), as applied to claim 10 above, and further in view of Shoham et al., (5,646,961).

Taniguchi et al., in view of Kamai et al., teach the system according to claim 10, but do not specifically teach wherein said measure is based on a status of a bit reservoir associated with a core encoder. Shoham et al., do teach the measure based on a status

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of a bit reservoir associated with a core encoder (Col.1, lines 52-65) as per claims 14 and 15.

Therefore it would have been obvious to one with ordinary skill in the art at the time of invention to incorporate the teaching of Shoham et al., in the apparatus/method of Taniguchi et al., in view of Kamai et al., because, this would effectively eliminate noise while maintaining volume at the level needed to hear by reducing the audibility of errors without affecting the energy.

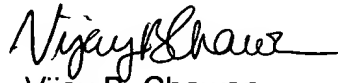
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vijay B. Chawan whose telephone number is (571) 272-7601. The examiner can normally be reached on Monday Through Thursday 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Vijay B. Chawan  
Primary Examiner  
Art Unit 2654

vbc  
6/12/05

**VIJAY CHAWAN  
PRIMARY EXAMINER**